1. The total deaths in a city X in 1975 were 600. Of these 30 were due to hypertension. If the total population is 100, 000, then the proportionate mortality rate from hypertension is?

A. 0.6
B. 10.5
C. 1.6
D. 5
E. 0.03

proportionate mortality rate $= \dfrac{\text{\# of Death Due Hypertension}}{\text{\# of total Death}} * 100\%$

$\Rightarrow \dfrac{30}{600} * 100\% = 5\%$ D—

2. In a community Z the total population was 40, 000,000 persons in 2011. If 40, 000 deaths from pneumonia occurred in the same year and locality, and total deaths equals 100, 000. Then the cause specific mortality rate from pneumonia is?

A. 20
B. 1
C. 400
D. 0.2
E. 4

Cause specific mortality rate $= \dfrac{\text{\# of Death Due to Pneumonia}}{\text{\# of whole Population}} * 1000$

$\Rightarrow \dfrac{40\,000}{40\,000\,000} * 1000 = 1$

3. In a city XX, in year 1999, the Crude Birth Rate is 44.5, and a Crude Death Rate is 9.8, and the estimated midyear population is 6 million, and net migration rate is (-0.6%). The growth rate is?

A. 4.5%
B. 5.47%
C. 3.92 %
D. 24%
E. 2.87%

GR= RNI + Net migration rate.

RNI $= \dfrac{CBR - CDR}{10} = \dfrac{44.5 - 9.8}{10} = 3.47\%$

$\therefore$ GR $= 3.47 + {}^{-}0.6 = 2.87\%$

4. If a population of a town Z was 900, 000 persons in the census of the year 1990 and it increased to reach 1000,000 in the year 2000. The estimated inter-censual population at 1997 was?

A. 900, 000
B. 820, 000
C. 970, 000
D. 960,000
E. 950, 000

1990 $\xrightarrow{\text{in 10 years}}$ 2000
900,000 $\longrightarrow$ 100 00 00

Ⓐ the increase in 10 years is :
1000000 — 900 000 = 100000

Ⓑ in each year there is a :
$\dfrac{100000}{10} = 10,000$

Ⓒ So, in 7 years, Consider the start point is 1990 :

900 000 + 7(10,000) = 970 000

5. In a village of 5000 persons, the following was registered: 200 births, 80 deaths, of these 20 were below 1 year and one woman died from maternal causes. The rate of natural increase in this village equals?

A. 24
B. 40
C. 2.4
D. 100
E. 0.8

$$RNI = \frac{\text{\# of Birth} - \text{\# of Death}}{\text{population}} \times 100$$

$$= \frac{200 - 80}{5000} \times (100) = 2.4$$

6. In a district of 15,000 persons, the following was registered: 600 births, 225 deaths. The rate of natural increase in this district equals?

A. 3.5
B. 2.5
C. 40
D. 15
E. 37.5

$$RNI = \frac{\text{\# of Birth} - \text{\# of Death}}{\text{Population}} \times 100$$

$$= \frac{600 - 225}{15000} \times 100 = 2.5$$

7. In a city Z, in year 2018, the Crude Birth Rate is 20/1000, Crude Death Rate is 3/1000, and the estimated midyear population is 3 million. The rate of natural increase is?

A. 3.2
B. 1.7
C. 2.3
D. 3.7
E. 4.5

$$RNI = \frac{CBR - CDR}{10} = \frac{20 - 3}{10} = 1.7$$

8. In a city Z, in year 2018, the Crude Birth Rate is 20/1000, Crude Death Rate is 3/1000, and the estimated midyear population is 3 million. The rate of natural increase is?

A. 3.2
B. 1.7
C. 2.3
D. 3.7
E. 4.5

9. In a district of a total population = 6, 000,000 persons in 2015 the number of cancer deaths reported were 12,000 deaths in the same year. The total deaths were 12,500. So, the specific death rate from cancer equals?

A. 6
B. 20
C. 10
D. 2
E. 50

$$\text{specific Death rate from Cancer} = \frac{\text{\# of Death Due to Cancer}}{\text{Whole Population}} \times 1000$$

$$\Rightarrow \frac{12,000}{6,000,000} \times 1000 = 2$$

10. The estimated midyear population of a country K in a certain year was 10,000,000. The total number of male = 6,000,000. Total number of death was 20,000 (male=12,000). So, Female Specific Death Rate is?

A. 15 per 1000
B. 2 per 1000
C. 5 per 1000
D. 4 per 1000
E. 10 per 1000

# of Female is: $10 * 10^6 - 6 * 10^6 = 4 * 10^6$

# of female Death is: $20 * 10^3 - 12 * 10^3 = 8 * 10^3$

• Female specific Death rate $= \dfrac{\# \text{ of female Death}}{\# \text{ of female}}$

$= \dfrac{8 * 10^3}{4 * 10^6} * 10^3 = 2$ per 1000

11. If the estimated midyear population of a country V in a certain year was 2,000,000. The total number of young population below 15 years old = 200,000, and the total number of population aged (15-60) years old = 800,000. So, the young dependency ratio is?

A. 5%
B. 25%
C. 35%
D. 50 %
E. 75%

young dependency ratio $= \dfrac{\# \text{ of Pop} < 15}{\# \text{ of Pop } 15 - <60} * 100 \div$

$= \dfrac{200,000}{800,000} * 100 = 25 \div$

12. The total deaths in a country X in 2002 were 300. Of these 45 were due to diabetes mellitus. If the total population is 45,000, then the proportionate mortality rate from diabetes mellitus equals to?

A. 15
B. 2.50
C. 0.25
D. 3.50
E. 10

proportionate mortality rate $= \dfrac{\# \text{ of Death Due to DM}}{\# \text{ of Deaths}} \times 100$

$= \dfrac{45}{300} * 100 = 15 \div$

⊙ Measures of mortality :-

1. Crude Death Rate = $\dfrac{\text{\# of Death}}{\text{\# of Population}} * \boxed{1000}$

2. Age specific Death Rate = $\dfrac{\text{\# of Deaths in a certain age}}{\text{\# of total population in a certain age}} * \boxed{1000}$

3. Sex specific Death rate = $\dfrac{\text{\# of Deaths in a certain Sex}}{\text{\# of total population in a same Sex.}} * \boxed{1000}$

4. Cause specific mortality rate = $\dfrac{\text{\# of Death Due to a certain Cause}}{\text{\# of Population}} * \boxed{1000}$

5. Proportionate mortality Rate = $\dfrac{\text{\# of Deaths Due to a certain Cause}}{\text{\# of Deaths from All CAUSES}} * \boxed{100}$

• كلهم مضروبين في ١٠٠٠ إلا آخر وحدة مضروبة في ١٠٠

⊙ Measures of fertility :

1- Crude Birth Rate (CBR) = $\dfrac{\text{\# of Live Births}}{\text{\# of Population}} * \boxed{1000}$

2- General fertility Rate (GFR) = $\dfrac{\text{\# of Live Births}}{\text{\# of females within reproductive Age (15-49)}} * \boxed{1000}$

3- Age specific fertility rate (ASFR) = $\dfrac{\text{\# of Live Births born by female in a specific age}}{\text{\# female population in the same age group}} * \boxed{1000}$

4- Total fertility Rate: Average # of children. (it is not required to obtain it mathmatically)

5- Gross reproduction Rate (GRR) = TFR * % of female Birth.

- Young dependency ratio = $\dfrac{\text{\# of Pop} < 15 \text{ years}}{\text{\# of Pop } 15 - < 60 \text{ years}}$ $\boxed{* \ 100}$

- Old dependency ratio = $\dfrac{\text{\# of Pop } 60 \leq \text{ years}}{\text{\# of Population } 15 - < 60 \text{years}}$ $\boxed{* 100}$

- Total dependency Ratio $= \dfrac{\text{\# of Pop} < 15 + \text{\# of Pop } 60 \leq \text{ years}}{\text{\# of Pop } 15 - < 60 \text{ years}}$ $\boxed{* 100}$

• كلهم مضروبين في ١٠٠ جماعة الـ Dependency

- Rate of Natural increase

$$RNI = \dfrac{\text{Crude Birth rate} - \text{Crude death rate}}{10} = \%$$

• داﺋﻤﺎً ﻧﺎﺗﺞ ﻫﻨﺎ، اﻟﻌﻼﻗﺔ ﻫﻮ ﻧﺴﺒﺔ ﻣﺌﻮﻳﺔ
ﻷن ﻛﻞ ﻛﻤﻴﺔ ﻣﻌﺒﺮ ﻋﻨﻬﺎ ﻓﻲ CBR و CDR ﻓﻲ ﻋﻼﻗﺘﻬﻢ
ﻫﻲ 1000 ، وﻟﺬا ﻧﻘﺴﻢ ﻋﻠﻰ 10.

$$\underline{Or} \ RNI = \dfrac{\text{\# of Birth} - \text{\# of Death}}{\text{\# of Population}} * 100$$

$$\circledast \ \text{Growth rate} = RNI + \text{Net migration rate}$$

$$\therefore \ \text{Net migration rate} = \text{Immigration} - \text{Emigration.}$$

□ The total deaths in a village in 1990 were 200. Of these 20 were due to pneumonia. If the total population is 10,000, then the proportionate mortality rate from pneumonia equals to:

- A.   180   Proportionate mortality
- B.   10   Rate = # of Death Due to
- C.   1   Pneumonia $\times 100 = \dfrac{20}{200} \times 100 = 10$
- D.   1.6   # of Deaths

□ In a city, in year 2013, the Crude Birth Rate is 30/1000, Crude Death Rate is 7/1000, and the estimated midyear population is 4 million, and net migration rate is (-0.3%). The rate of natural increase is:

- A.   3.2% $RNI = \dfrac{CBR - CDR}{10} = \dfrac{30 - 7}{10} = 2.3\%$
- B.   23 %
- C.   2.3%
- D.   37/5000

□ In a city XX, in year 1999, the Crude Birth Rate is 44.5, and a Crude Death Rate is 9.8, and the estimated midyear population is 6 millions, and net migration rate is (-0.6%). The growth rate is?

- 4.5%   GR = RNI + Net migration rate
- 5.47%
- 3.92 % $= \dfrac{CBR - CDR}{10} +$ Net migration rate
- 24%
- 2.87% $= \dfrac{(44.5 - 9.8)}{10} + (-0.6) = 2.87$